

1. Smoking Topography

1.1. *What is Smoking Topography?*

- 1.1.1. Puff Volume, Puff Duration, Puff Count
- 1.1.2. Inter-Puff Interval, Peak Flow
- 1.1.3. Average Flow, Time of Peak
- 1.1.4. Time to First Puff (latency)
- 1.1.5. Time to Removal
- 1.1.6. Temperature

1.2. *Compensatory Behavior*

1.3. *Other Behavioral Changes*

2. The CReSSmicro Device

2.1. *Overview*

- 2.1.1. Display, buttons, LED, buzzer
- 2.1.2. Mouthpiece and bracket (removable for cleaning)
- 2.1.3. Data port and cable
- 2.1.4. Battery compartment
- 2.1.5. Two Configurations
 - 2.1.5.1. Mechanical**
 - 2.1.5.2. Optical**

2.2. *Features of Interest*

- 2.2.1. No "on/off" switch

- 2.2.2. Storage capacity
- 2.2.3. Battery life
- 2.2.4. Date and time
- 2.2.5. Self-zeroing at every cigarette-in
- 2.2.6. Abandon timer

2.3. Participant Instructions

- 2.3.1. Holding the device properly
- 2.3.2. Inserting a cigarette properly
- 2.3.3. Display, buttons, LED not used at this time
- 2.3.4. One beep at Cig-In, Three beeps at Cig-Out (if either sound is not heard, the battery is too low to continue)
- 2.3.5. Do not drop or get the unit wet
- 2.3.6. Do not share the device with others (non-lab studies)
- 2.3.7. Remove the cigarette before putting it out
- 2.3.8. Measuring the "lighting puff"
- 2.3.9. Do not open unit or battery compartment
- 2.3.10. Do not zap with static electricity

2.4. Staff Instructions

- 2.4.1. Replacing the battery
- 2.4.2. Do not leave serial cable installed longer than necessary
- 2.4.3. Remove battery if not in active use
- 2.4.4. Alcohol swab and wipe between subjects

2.4.5. Cleaning the mouthpiece (alcohol or bleach)

2.4.6. Assembly and disassembly

3. The CReSShost Software

3.1. Overview

3.1.1. Requires an open 9-pin serial port for CReSSmicro

3.1.2. "Tree view" of devices to choose from

3.2. Communications

3.2.1. Audible feedback for cable in/out

3.2.2. Assigning a serial port

3.2.3. Authentication and the Organization ID

3.2.4. Device must have battery installed for communications

3.2.5. If there is a cig in the device, it will not recognize the data cable

3.2.6. If the data cable is inserted, the device will not recognize cig-in

3.3. The Finder

3.3.1. Locate a connected device

3.3.2. Serial number used for tracking

3.4. The Device Dashboard

3.4.1. Preparing a device for use

3.4.1.1. Synchronizing the date and time

3.4.1.2. Test puffs

3.4.1.2.1. Confirmation device is working properly

3.4.1.2.2. Printed report available

3.4.1.2.3. Measures are never stored on the device or host

3.4.1.3. Checking battery level

3.4.2. Downloading measures

3.4.2.1. Selecting Participant ID, Staff ID, and Study ID

3.4.2.2. Selecting the download file/folder (based on Participant ID)

3.4.2.3. Data storage and management (new data are always appended)

3.4.2.4. Hierarchical view of the measures

3.4.2.4.1. Printed report available immediately after download only

3.4.2.5. Erasing measures from the device

3.4.2.5.1. Operation is permanent

3.4.2.5.2. Confirmation prompt

3.4.2.6. A look at the measures

3.4.2.6.1. Cigarette-level data

3.4.2.6.2. Puff-level data (note IPI for Puff 1 is meaningless and should not be used)

3.4.2.7. Backup Your Data!

3.4.2.8. File Format

3.4.2.8.1. ASCII text file with .txt file extension

3.4.2.8.2. Tab-separated values

3.4.3. Configuration settings

3.4.3.1. Cigarette abandon timer

3.4.3.2. PuffCleanUp (data cleaning)

3.5. *The List Manager*

3.5.1. Manage various lists maintained by the software

3.5.2. Can delete devices but not add new ones

3.5.3. Printing the lists for record keeping

3.5.4. Be careful deleting, there is no confirmation prompt

3.5.5. Does not affect data already downloaded

4. Troubleshooting

4.1. *What can go wrong?*

4.1.1. Not waiting long enough for optical sensing of cig-in (demonstration)

4.1.2. Connecting to the "wrong" device (demonstration)

4.1.3. Forgetting to drop the connection prior to using the Finder (demonstration)

4.1.4. Communication failure due to data cable not properly installed (demonstration)

4.1.5. Optical sensor detects ambient light as false "cig-in" (virtually impossible)

4.1.6. Forgetting to "Erase" measures from one subject prior to using the device with another subject (demonstration)

4.1.7. Dead or low battery (demonstration)

4.1.7.1. No beep at Cig-In or Cig-Out (can lose last cig's data)

4.1.7.2. Battery power can be too low for cig but still allow serial communications

4.1.8. Leaving cigarette in device when removing serial cable, delays one second then recognizes cig-in (demonstration)

4.1.9. Leaving cigarette in when complete (i.e., not switching the mechanical switch or removing the cig)

4.1.9.1. Cig/puff data not saved until cig is removed (optical) or switch is turned off (mechanical)

4.1.10. Loss of battery door screws (extras provided)

4.1.11. Loss of mouthpiece bracket/screws (extras provided)

4.1.12. Knowing which unit is which

4.1.12.1. Serial# shown at power up (battery installed) for 20-seconds

4.1.12.2. Serial# shown in CReSShost treeview

4.2. Communications

4.2.1. Make sure data cable seated well in device

4.3. Device errors

4.3.1. Rapid buzzer blasts, error message on LCD (for 20 seconds)

4.3.2. Error 04XX = Low Battery, Can't Store Data

4.4. Software (PC) errors

4.4.1. Fatal error report on printer

4.4.2. Fax report to us at 410-563-5335

4.5. Support

4.5.1. Email is best... use support@plowshare.com

- 4.5.2. Phone support at 410-342-5947
- 4.5.3. Emergency phone support by cell phone at 410-215-9002
- 4.5.4. Upgrades
 - 4.5.4.1. CReSShost upgrades by CDROM or password-controlled web download**